

Please amend the application as follows:

In the Claims

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Please cancel Claims 8, 9, and 38-68 without prejudice to their reinstatement in this or a continuing application.

Please amend Claim 1 as follows:

1. (Amended) A method of phase-shifting a beam from an electromagnetic beam source in a lithographic process comprising:

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focusing a beam from the electromagnetic beam source onto a mask having a primary feature and one or more assist features proximate to the primary feature, the one or more assist features configured such that, when an electromagnetic beam passes through the mask, opposing electric fields generated at the primary feature and at the one or more assist features balance to substantially eliminate the electric field at the zero frequency at the primary feature, the mask adapted to selectively phase-shift at least a portion of the beam according to a predetermined pattern;

passing the beam from the electromagnetic beam source through the mask producing a phase-shifted beam having substantially no zero-order light; and

directing the phase-shifted beam at a substrate adapted to image the primary feature.

Amendments to the claims are indicated in the attached "Marked Up Version of Amendments" (page i).

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Please add new Claims 69-87.

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69. (New) A method of forming a phase-shift mask employing photomask topography and photoresist sensitivity to electromagnetic radiation comprising:

determining a proposed pattern layout for a phase-shift mask comprising a primary feature and one or more assist features;

analyzing, in a frequency domain, the phase and amplitude of a diffraction pattern of the proposed mask pattern via a Fourier transform; and

based upon the analysis step, adjusting a physical characteristic of the primary feature or an assist feature, and repeating the analyzing and adjusting steps until a final mask pattern is determined in which opposing electric fields generated at the primary feature and at the one or more assist features balance to produce a desired amount of zero-order light for a selected imaging application.

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cont.
- 70. (New) The method of claim 69, further comprising fabricating a mask in accordance with the final mask pattern layout.
 - 71. (New) The method of claim 69, wherein the phase-shift mask comprises a strong phase-shift mask.
 - 72. (New) The method of claim 69, wherein the mask pattern is designed to substantially eliminate zero-order light when an electromagnetic beam passes through the primary feature and the one or more assist features.
 - 73. (New) The method of claim 69, wherein the desired imaging application comprises imaging an isolated feature.
 - 74. (New) The method of claim 69, wherein the phase-shift mask comprises a weak phase-shift mask.
 - 75. (New) The method of claim 69, wherein the desired imaging application comprises an off-axis illumination.

76. (New) The method of claim 69, wherein the analyzing step comprises simulating the performance of the proposed mask layout on a computer.
77. (New) The method of claim 76 wherein the computer further comprises a plurality of computers in parallel.
78. (New) The method of claim 69, wherein adjusting a physical characteristic of the primary feature or an assist feature comprises adjusting at least one of the size, location, thickness, or transmittance of the feature.
79. (New) The method of claim 69 further comprising forming an assist feature by a subtractive etch process.
80. (New) The method of claim 69 further comprising forming the primary feature by a subtractive etch process.
81. (New) The method of claim 69 further comprising forming an assist feature by an additive process.
82. (New) The method of claim 69 further comprising forming the primary feature by an additive process.
83. (New) The method of claim 69 further comprising forming the mask from a photomask material having a transmittance greater than zero and less than or equal to one.
84. (New) The method of claim 69 further comprising forming an assist feature from a material having a transmittance greater than zero and less than or equal to one.
85. (New) The method of claim 69 wherein the analyzing step comprises:
employing an EMF (electromagnetic field) simulator; and

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cont.

determining a complex transmittance and phase of the primary and assist features, and using this information to construct a diffraction pattern for analysis.

86. (New) The method of claim 69 wherein the one or more assist features comprises multiple pairs of assist features.

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cont.

87. (New) The method of claim 69 wherein the primary feature comprises a two dimensional primary feature.
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